What is Claimed is:

1. A rechargeable electrochemical battery cell comprising a closed housing in which there are positioned two or more units which differ only in the active material, each such unit comprising a flat flexible bag of an ion conductive insulating material (membrane) containing a flat, conductive flexible frame of electrode and from both its sides a powder form active material, an electrolyte, where each electrode is connected with a conductor leading to the outside for current uptake, means being provided for maintaining pressure from granule to granule and from granule to electrode flexible frame for needed electrical contact.

2. A cell according to claim 1, which for decreasing dendrite hazards has a conductor executed in the first form of a flexible electrically conducting envelope which contains a flexible conductive support of active material in powder or granular form,

the second electrode being also in the form of a flexible electrically conductive envelope containing an electrically conductive support on which there is a layer of an electrochemically complementary active material, flexible ion-conductive membrane sheet positioned between the two envelopes, and means for exerting pressure on the assembly of electrode separator sheet or membrane/counterelectrode so as to maintain these in close contact with each other, said assembly being immersed in a suitable electrolyte, electrode connections being provided from each of the envelopes.

3. A cell according to claim 1 or 2, where the electrode fabric is woven and pleated active materials is a flexible electrically conducting fabric mainly of carbon fibers and other active material fibers.

4. A cell according to any of claims 1 to 3, where the active material pair is one of the following: Ni/Cd, Ag/Zn, Pb/PbO.

5. A cell according to any of claims 1 to 4, where the support is a flexible fabric comprising a sequence of adjacent parallel conductive and insulating stripes.

6. A cell according to any of claims 1 to 5, where the thickness of each electrode is between about 1 and 10mm.

7. A cell according to any of claims 1 to 6, where the particles of the active material are of a grain size of between about 1 and 10 microns, in a 0.5 to 3mm thick layer with or without a suitable matrix.

8. A cell according to any of claims 1 to 7, where the thickness of the fabric is between about 10 and 100 microns.

9. An electrochemical cell according to any of claims 1 to 8, where the cell is wound in a helical configuration with an external or internal spring applying a pressure on the assembly.

10. An electrochemical cell according to any of claims 1 to 9, having high mechanical strength comprising a high-strength, porous, micron pore size fabric separator.

11. A modified cell according to claim 1, being a fuel cell, where catalytically active material is supported by a ceramic substrate, the reaction being an interaction of oxygen and hydrogen producing water and energy.

12. A fuel cell according to claim 11, where a catalyst is plated on a conductive fabric with high surface area.

13. A cell according to any of claims 1 to 12, where the electrode comprises parallel fibers of carbon and fibers of active material, such as carbon and silver.

14. A cell according to any of claims 1 to 13, where the active material in discharged position is preliminarily pressed under medium pressure to achieve a porosity of 50-60% for the cathode and 30%-50% for the anode in the bulk condition, and where said active material is pressed under flexible low pressure when said cell is fully assembled.

15. A cell according to claim 14 where the preliminary pressure used is about 100 to 200 kg/cm^2 and where the low pressure used is about 0.2 to 5 kg/cm^2.

16. A cell according to any of claims 1 to 15, where the electrode's flexible conductive support (substrate) or separator positioned in the bulk active material is made from a flexible thin grid material, where said grid material is of the expanded metal type.

17. A cell according to claim 16, where the material of the grid is suitable for anodes made of cadmium, zinc, tin or indium and/or cathodes of nickel or silver.

18 A cell according to any of claims 1 to 17, where the electrode's flexible conductive support positioned in the active material is made of woven graphite fibers, said fibers coated with metal to suppress gas evolution.

19. A cell according to claim 18 wherein the thickness of the metal coating applied to suppress gas evolution is 5 to 15 microns.

20. A cell according to claim 18, wherein the cell is a silver-zinc rechargeable cell and where the metal coating used is nickel or silver for the cathode and tin, indium, cadmium, lead, or zinc for the anode.

21. A cell according to claim 18, where the coating consists of two layers, a solid protective layer of 95-99% solidity and a second layer of 30-60% porosity.

22 A cell according to any of claims 1 to 21, wherein the means for exerting pressure is the outer container of the cell, said container having an elasticity needed to maintain a pressure adequate to ensure electrical contact within the assembled cell.

23. A cell according to any of claims 1 to 22, wherein the cell is a spiral type cell and wherein the means for exerting pressure is executed by a central flexible rod or separator layer.

24. A cell according to any of claims 1 to 23, wherein the separator consists of three layers, the first layer imparting mechanical strength to the separator and providing first stage protection from silver oxide penetration, this layer made from a nylon, polypropylene or polyethylene treated woven fabric, a second layer preventing whisker and silver penetration and made from cellulose materials which increase in volume in electrolyte and produce a constant pressure and electrical contact between the electrode and active materials, and a third layer made of an ion separation polyethylene – polypropylene film and executed in the form of a closed bag.

25. A cell according to any of claims 1 to 24, wherein one of the electrodes has a semi-rigid consistency, said semi-rigid consistency having a porosity of 30-50 %, and said electrode executed by sintering, pressing or other method.

26. A cell according to claim 25, wherein the cell is a secondary silver-zinc cell and wherein the electrode formed as in claim 25 is the silver electrode.